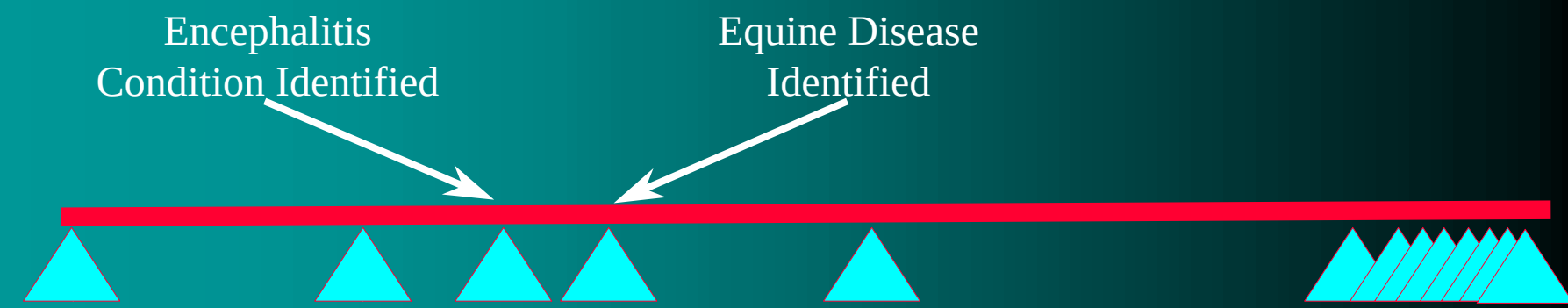
West Nile Virus
In the United States

WNV Background

- First isolated in the West Nile District of Uganda, 1937
- Recognized as a cause of inflammation of the spinal cord and brain with outbreak in elderly patients, Israel, 1957
- Equine disease noted in Egypt and France in the early 1960s
- 1999 “Old World” virus arrives in the “New World”

Outbreak Timeline



Uganda
1937

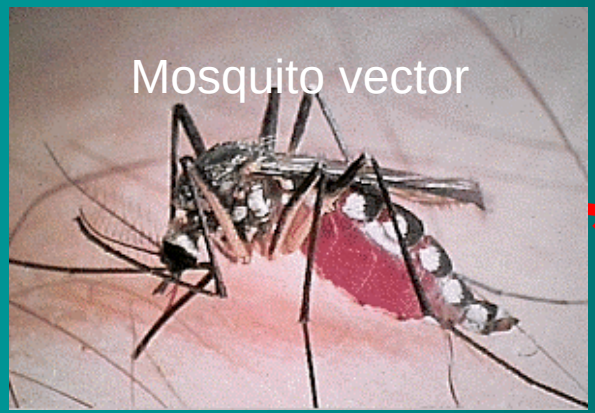
Israel
1951-54

Israel 1957
France 1962

South Africa
1974

Romania 1996
Italy 1997
Czech Rep. 1998
Congo 1998
Russia 1999
US 1999-2002
Israel 2000-2002
France 2000

West Nile Virus Transmission Cycle

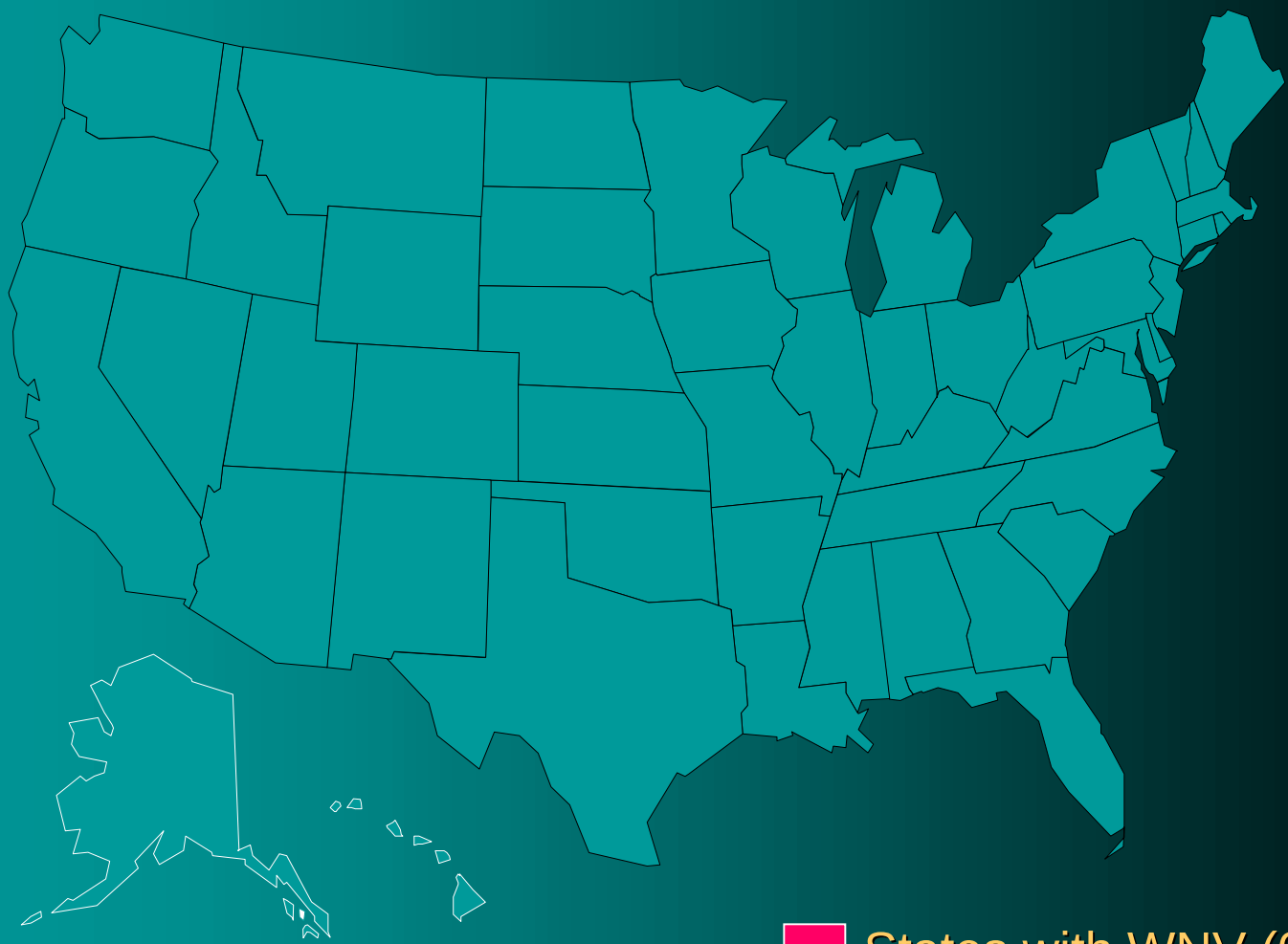


WNV Symptoms

- High Fever
- Headache and body aches
- Skin rash
- Swollen lymph glands
- Neck stiffness
- Disorientation
- Convulsions

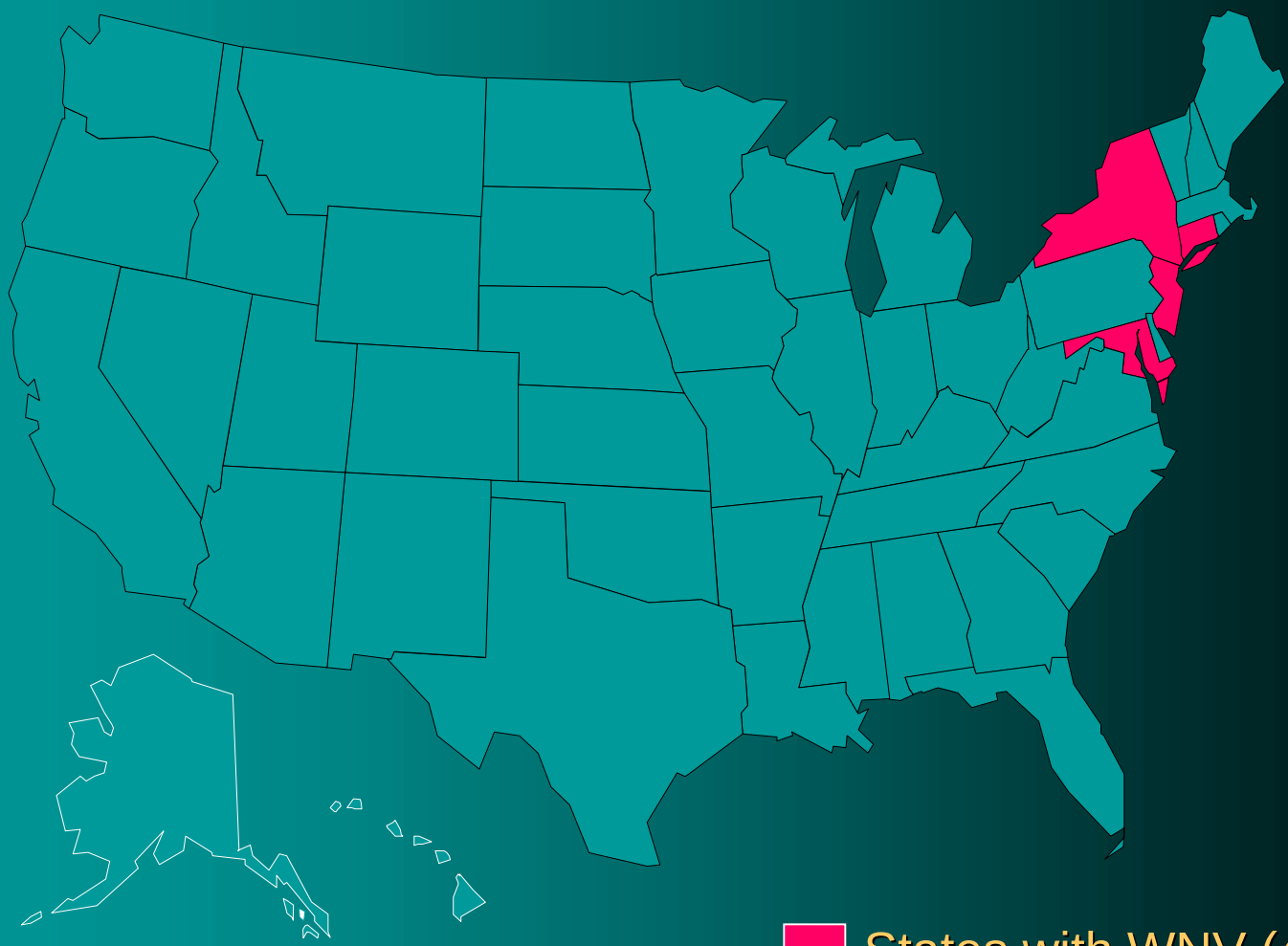
The incubation period for West Nile Virus is generally 3-14 days following a bite from an infected mosquito.

Distribution of WNV Before 1999

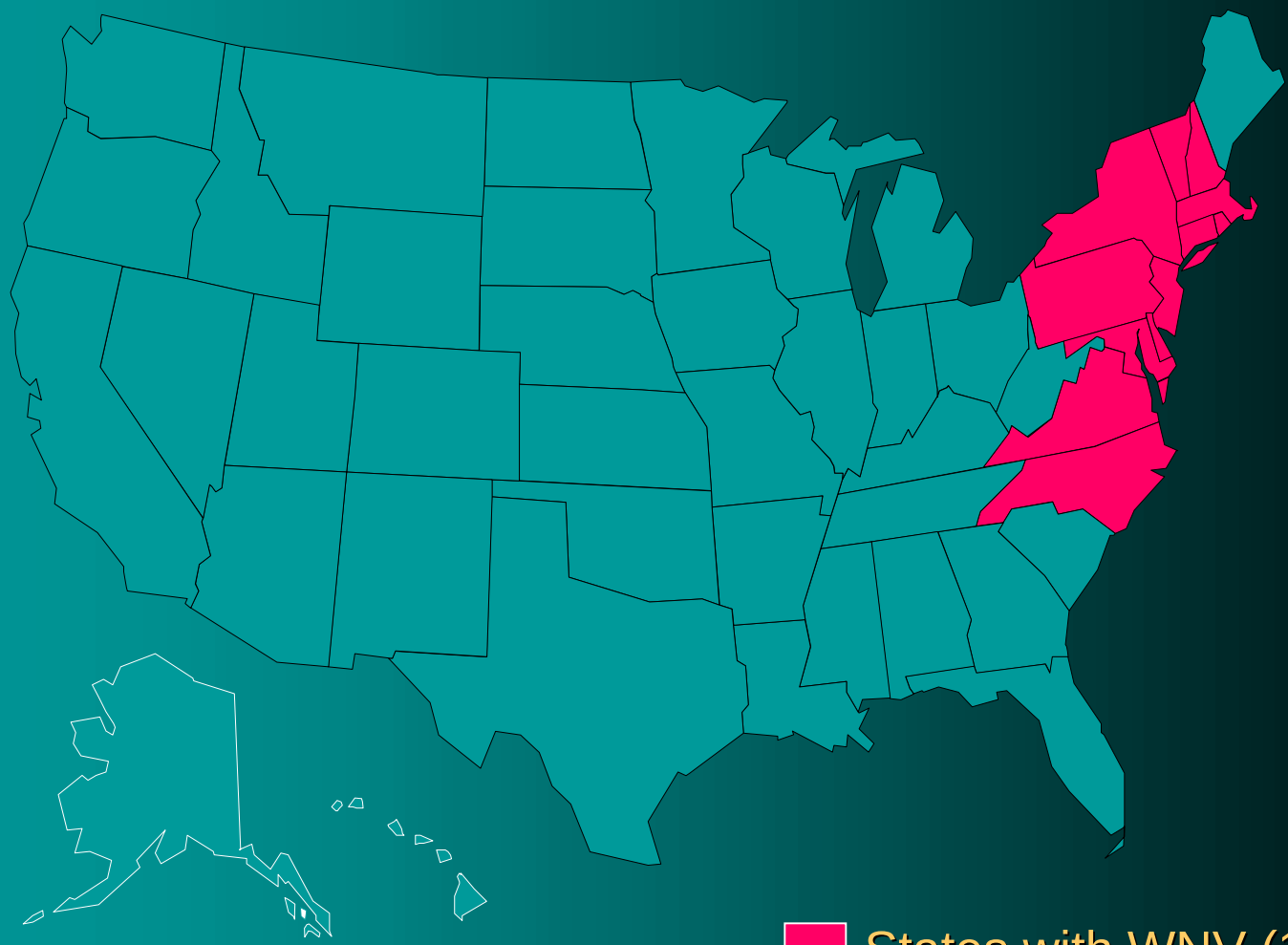


States with WNV (0)

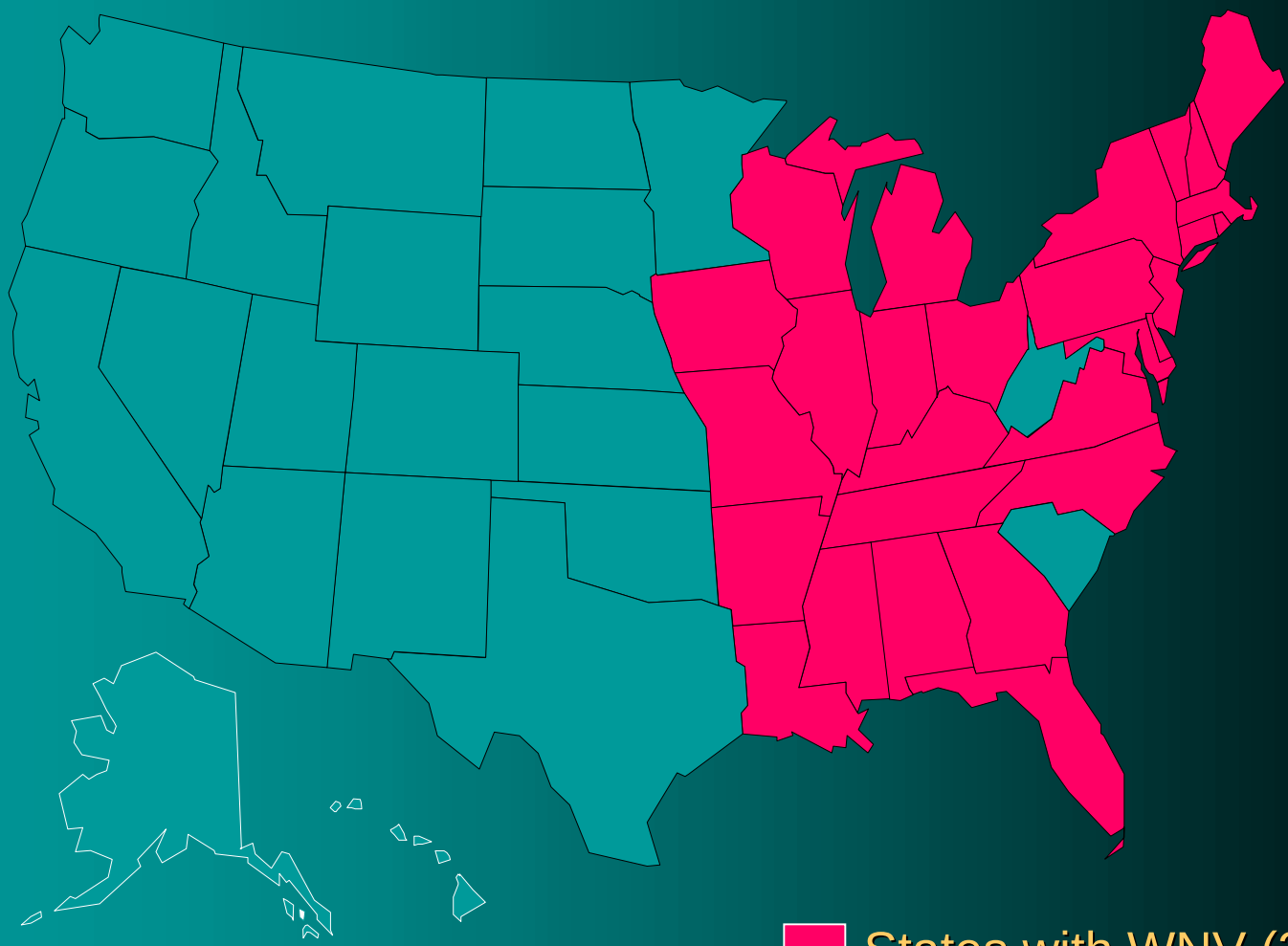
Distribution of WNV as of November 1999



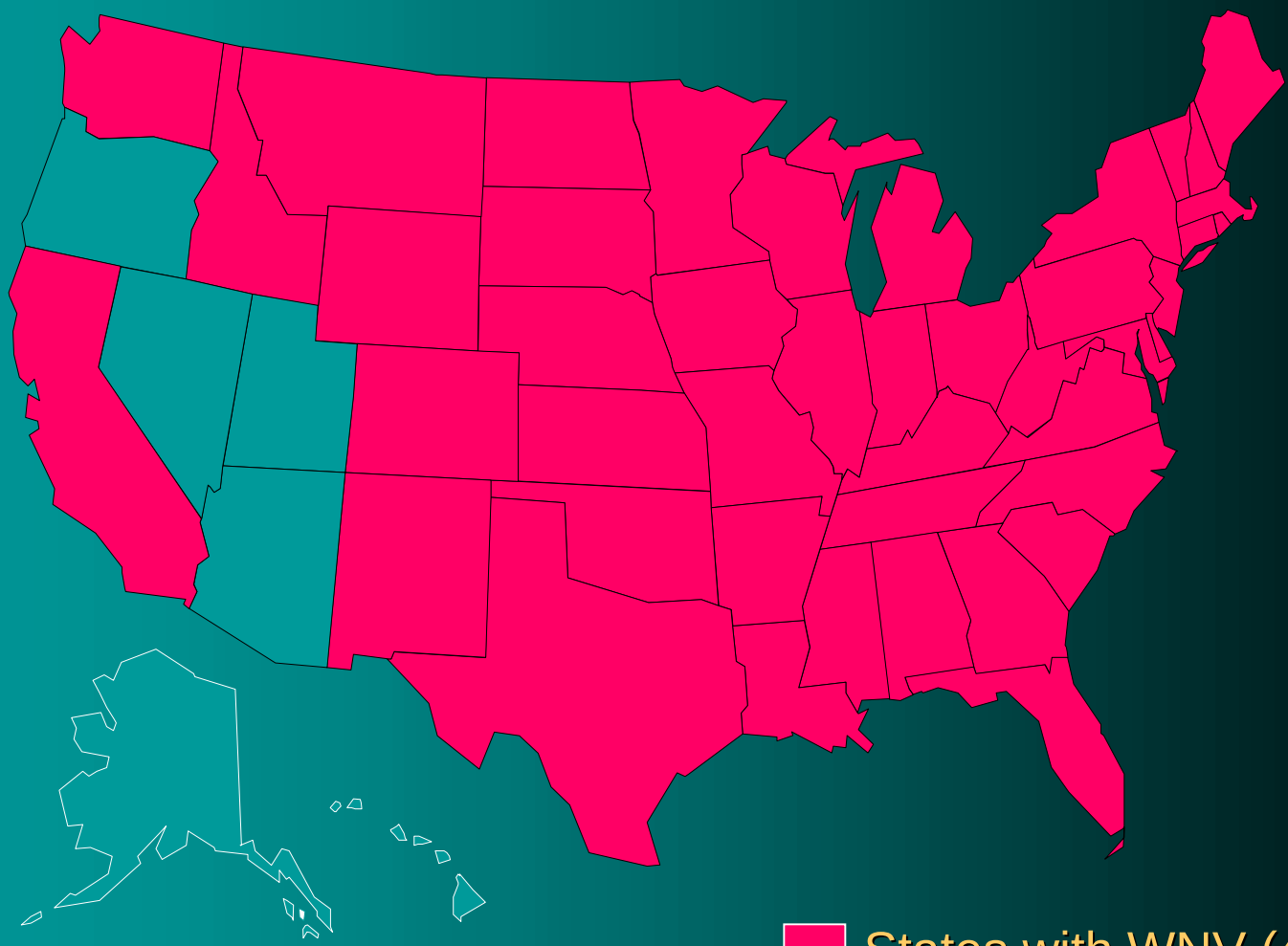
Distribution of WNV as of November 2000



Distribution of WNV as of November 2001



Distribution of WNV as of December 2002



Case Summary 1999-2002

Year	Humans (deaths)	Horses (deaths)
2002	3,873 (246)*	14,358**
2001	66 (9)	733 (156/470)
2000	21 (2)	60 (23)
1999	62 (7)	25 (8)

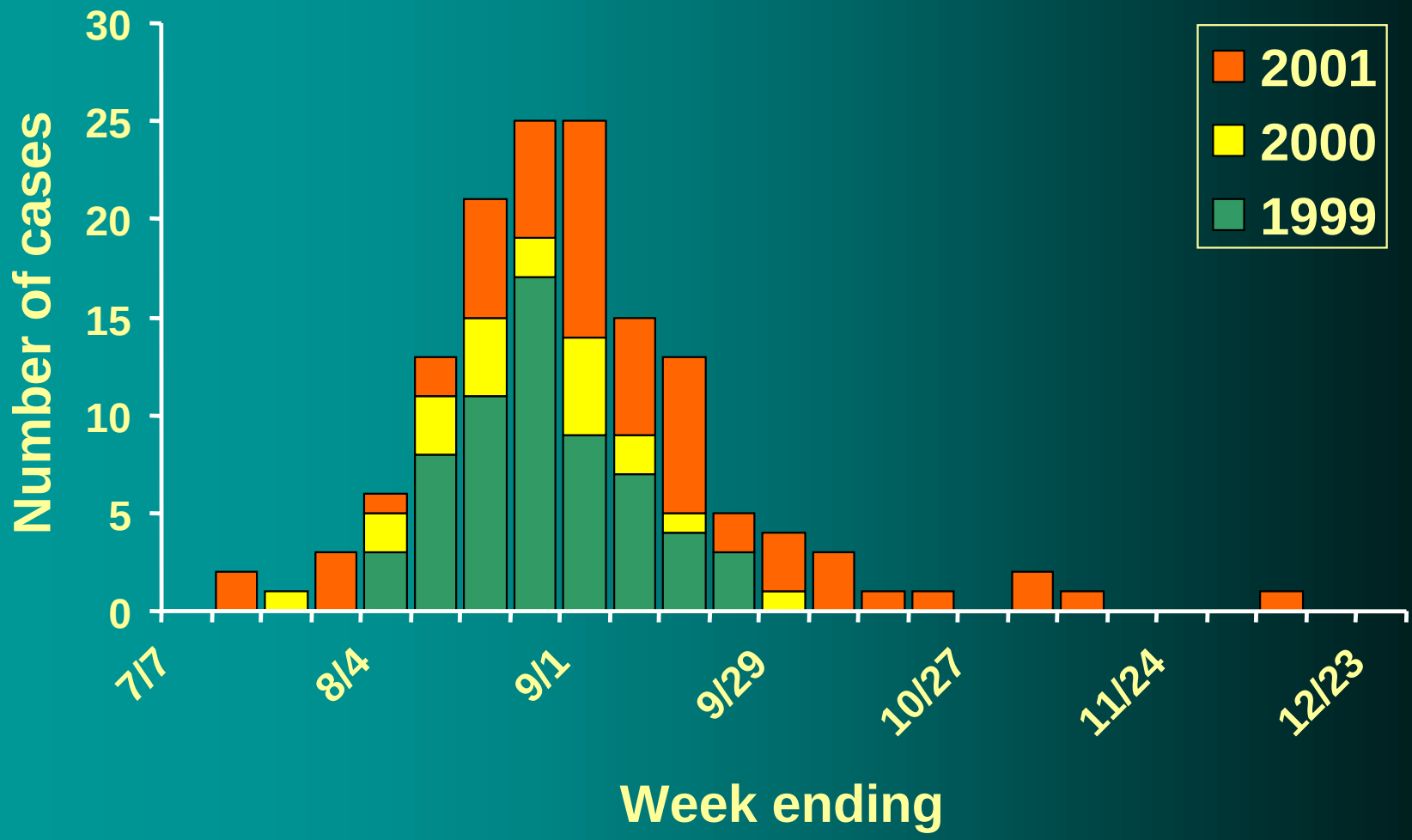
•As of December 31, 2002 **As of December 1, 2002

WNV Case-Patient Demographics & Mortality United States, 1999-2002*

	1999-2000	2001	2002*
Cases	83	66	3,852
Age Median	65	68	55
Age Range	5-90 yr	19-90 yr	1 mn-99 yr
Males	54%	65%	54%
Fatality Rate	11%	14%	6%
Fatality Age			78 (24-99 yr)

***As of Dec 19**

Date of Symptom Onset, West Nile Virus United States, 1999-2001



Protecting Public Health

- Surveillance
- Personal Protection and Education
- Mosquito Control

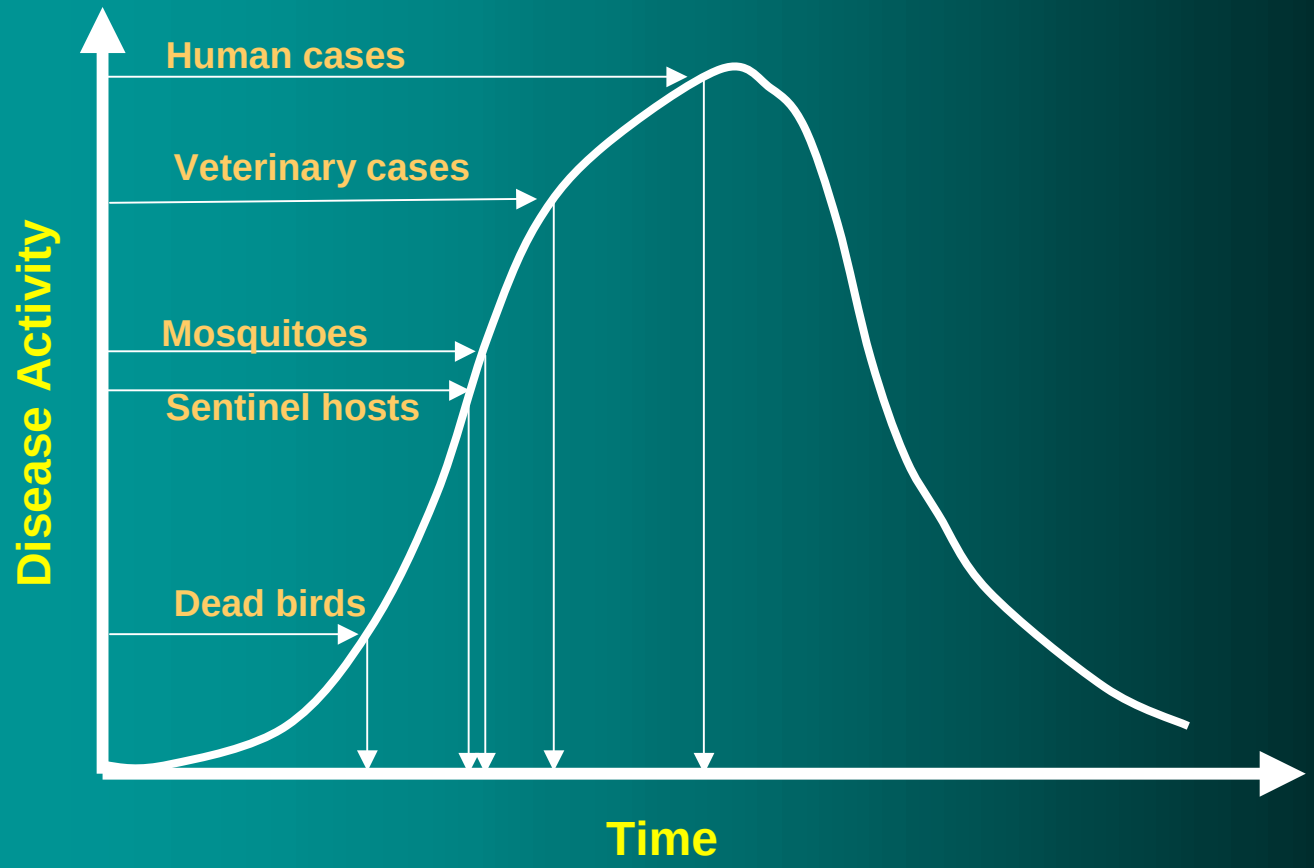
WNV Surveillance

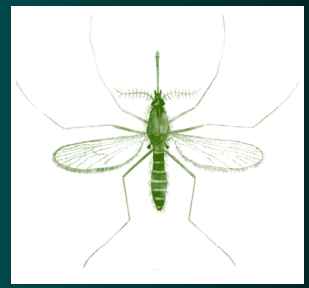
- Dead birds (especially crows, jays, ravens and magpies)
- Mosquitoes
- Veterinary surveillance
- Human surveillance

WNV Mosquito Species in Washington

	Counties (39)
Aedes cinereus	22
Aedes vexans	27
Culex pipiens	28
Culex restuans	1
Culex tarsalis	35
Anopheles punctipennis	26
Coquilletidia perturbans	10
Ochlerotatus canadensis	5
Ochlerotatus japonicus	1

Estimated Sensitivity of WNV Surveillance Methods





Mosquito-borne Disease Response Plan

Washington State

Washington State Department of Health response to threats of arbovirus, such as West Nile virus transmitted to humans by mosquitoes.

November 2002

Agency Roles and Responsibilities

- Department of Health
- Department of Ecology
- Department of Agriculture
- Local Health Jurisdictions

Department of Health

- Coordinate statewide surveillance and response
- Technical assistance and training
- Public information and education
- Laboratory support

Department of Ecology

- Permitting process for aquatic pesticides
- Integrated Pest Management Program for mosquito control
- Storm water ponds and wetland issues

Department of Agriculture

- Technical assistance for large animal veterinarians
- Approval of vaccines (WNV for horses)
- Regulate registration and labeling of pesticides
- License pesticide applicators, including mosquito control personnel

Local Health Jurisdictions

- Surveillance activities
- Lead on local response
- Public information and education
- Case investigation
- Public health lead on mosquito control

Other Involved Agencies

- Department of Fish and Wildlife
- Department of Natural Resources
- State Parks and Recreation Commission
- Department of Transportation
- Washington State University
- University of Washington
- Tribes of Washington

Current Efforts

- Training for counties
- Public information
- Communication plans (DOH - Interagency)
- Grant renewal

Issues

- Mosquito control
- Funding to maintain activity
- Communication and coordination